wherein the shaft and the impeller rotate due to a magnetic interference function between the magnet and a winding provided at a position of a stator corresponding to the magnet, which is supplied with a current, the blower is characterized in that, in a resin-made bearing box, two ball bearings each having an inner race and an outer race, the inner race being narrower than the outer race, are inserted from one side of the blower, and being displaced while accommodating their positions to the direction of the shaft, wherein one of the inner races of the two ball bearings is pushed with a spring toward the other ball bearing.

REMARKS

Claims 1 and 2 are pending. By this Amendment, claims 1 and 2 have been amended. No new matter has been added. Reconsideration based on the above amendments and the following remarks is respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 CFR §1.121(c)(1)(ii)).

I. THE CLAIMS DEFINE ALLOWABLE SUBJECT MATTER

The Office Action rejects claims 1 and 2 under 35 U.S.C. §103(a) as being unpatentable over Wrobel (U.S. Patent No. 5,274,289) in view of Mouri et al. (U.S. Patent No. 6,010,247). This rejection is respectfully traversed.

Wrobel does not teach two ball bearings each having an inner race and an outer race, the inner race being narrower than the outer race, being inserted from one side of a blower, and being displaced while accommodating their positions to the direction of the shaft, as claimed in claim 1. Additionally, Wrobel does not teach two ball bearings each having an inner race and an outer race, the inner race being narrower than the outer race, being inserted from one side of a blower, and being displaced while accommodating their positions to the direction of the shaft, wherein one of the inner races of the two ball bearings is pushed with a spring toward the other ball bearing, as claimed in claim 2.

Instead, Wrobel discloses in col. 2, lines 55-63, and Fig. 1, an external rotor motor, having bearing 12 which comprises two spaced ball bearings 12a. The electrical motor stator 11 has a bearing tube 11a in which are located both the ball bearings of the bearing 12 which are fixed therein by way of a retaining clip 20. The electric motor 13 carries a substantially cylindrical permanent magnet 13a and is fixed by means of a rotor pin on a rotor shaft 14, which is journaled into bearing 12. Col. 4, lines 23-25 teach tube 11a being made of plastic. Additionally, Wrobel teaches, in col. 2, line 64-col. 3, line 1, compression spring 5 for supporting one end of the rotor shaft 14.

Mouri et al. does not make up for this deficiency.

Because Wrobel does not disclose this feature, it cannot provide the advantages of the claimed invention. For example, displacing the two ball bearings while accommodating their position to the direction of the shaft increases the coaxiality of the ball bearings.

Thus, if it was obvious to modify Wrobel to make up for this deficiency, then one of ordinary skill in the art would have done so to achieve the above advantage. However, the Examiner has yet to find such a reference.

II. CONCLUSION

In view of the foregoing amendments and remarks, Applicant submits that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1 and 2 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

Respectfully submitted,

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JAO:KM/scg

Attachment:
Appendix

Date: September 28, 2001

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DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

Docket No.

Application No.

APPENDIX

Changes to Claims:

The following are marked-up versions of the amended claims:

1. (Twice Amended) In a blower which comprises an impeller fixed on one end of a shaft supported rotatably by bearings and a ring-like magnet provided inside the impeller, wherein the shaft and the impeller rotate due to a magnetic interference function between the magnet and a winding provided at a position of a stator corresponding to the magnet, which is supplied with a current, the blower is characterized in that, in a resin-made bearing box, two ball bearings each having an inner race and an outer race, the inner race being narrower than the outer race, are inserted from one side of the blower and being displaced while accommodating their positions to the direction of the shaft.

2. (Twice Amended) In a blower which comprises an impeller fixed on one end of a shaft supported rotatably by bearings and a ring-like magnet provided inside the impeller, wherein the shaft and the impeller rotate due to a magnetic interference function between the magnet and a winding provided at a position of a stator corresponding to the magnet, which is supplied with a current, the blower is characterized in that, in a resin-made bearing box, two ball bearings each having an inner race and an outer race, the inner race being narrower than the outer race, are inserted from one side of the blower, and being displaced while accommodating their positions to the direction of the shaft, ~~and~~wherein one of the inner races of the two ball bearings is pushed with a spring toward the other ball bearing.